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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,425	11/03/2003	Jun-Kyu Cha	P56982	1512

7590 10/18/2005
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EXAMINER

HINES, ANNE M

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 10/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

EF

Office Action Summary	Application No.	Applicant(s)	
	10/698,425	CHA ET AL.	
	Examiner	Art Unit	
	Anne M. Hines	2879	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 13-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 13-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 6/2/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

The amendment filed on September 8, 2005, has been entered and acknowledged by the Examiner.

Claims 1-11 and 13-22 are pending in the instant application.

Election/Restrictions

In view of the amendment filed on September 8, 2005 the restriction requirement is withdrawn.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 17, 19, 20, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Paynton (US Pat. No. 4,514,585).

Regarding claim 17, Paynton discloses a filter comprising a substrate that is transparent to light (Fig. 2A, 20; Column 3, lines 49-51); a conductive mesh pattern arranged on one side of the substrate (Fig. 2A, 21; Column 3, lines 58-59); and a non conductive material arranged on said one side of said substrate at locations absent said conductive mesh (Fig. 2A, 22; Column 3, lines 61-64).

Regarding claim 19, Paynton further discloses wherein the nonconductive material comprises negative photoresist comprising additives (Column 4, lines 38-57).

Regarding claim 20, Paynton further discloses wherein the conductive mesh pattern is electrically grounded (Column 4, lines 58-62).

Regarding claim 21, Paynton further discloses wherein the conductive mesh pattern has a grid pattern since a mesh is inherently a grid (Merriam-Webster Dictionary: a grid is an electrode consisting of a mesh in an electron tube).

Claims 17 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Olson (US Pat. No. 4,958,148).

Regarding claim 17, Olson discloses a substrate that is transparent to light (Fig. 2, 15; Column 3, lines 21-22); a conductive mesh pattern arranged on one side of the substrate (Fig. 2, 40; Column 4, lines 1-10); and a non conductive material arranged on said one side of said substrate at locations absent said conductive mesh (Fig. 2, 45; Column 45, lines 10-18).

Regarding claim 18, Olson further discloses wherein the conductive mesh pattern and the non conductive material have equal depths between 1 and 50 microns (Column 4, lines 1-31).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1,2, 5, 6, 7, 8, 11, 13, 14, 15, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (US Pat. No. 6,559,592) and further in view of Saito et al. (US Pat. No. 6,469,440) and Kobayashi et al. (US 2004/0027514).

Regarding claim 1, Lee teaches a filter comprising: a substrate (Fig. 3, 45; Column 4, line 22), a conductive material pattern arranged on the substrate (Fig. 3, 46; Column 4, lines 23-24), and a black matrix pattern (Fig. 3, 47; Column 4, line 26); patterned on the substrate on portions not covered by the conductive material (Fig. 3). Lee fails to teach wherein the black matrix pattern is a photoresist material comprising a pigment and a dye that cuts off light of a specific wavelength range and further comprising a material that prevents external light from being reflected; and a plated mesh arranged on the conductive material pattern. Saito teaches a filter comprising a conductive mesh member (Fig. 1, 3; Column 5, lines 53-54) in order to block electromagnetic waves (Column 1, lines 28-34). Kobayashi teaches a black matrix material of a photoresist containing a dye (Page 1, Paragraph [0007]), a pigment (Page 1, Paragraph [0007]), and a material that prevents external light from being reflected (Page 5, Paragraph [0065]) and also teaches a dye that cuts off light of a specific wavelength range (Page 9, Paragraph [0110]) in order to form a black matrix with high

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precision and high sensitivity (Page 11, Paragraph [0135]). Therefore it would have been obvious to one of ordinary skill in the art to modify the filter of Lee to have the black matrix material disclosed by Kobayashi and the conductive mesh disclosed by Saito in order to make a filter that blocks electromagnetic waves and a black matrix with high sensitivity and precision.

Regarding claim 2, Kobayashi further discloses wherein the photoresist material comprises acrylic resin (Page 5, Paragraph [0065]). Motivation to combine is the same as for claim 1.

Regarding claim 5, Lee further discloses wherein the thickness of the conductive material pattern is 3-5 μm (Column 5, lines 29-33). Saito further discloses wherein the conductive mesh member has a wire diameter of 1 μm (Column 13, lines 22-29). It would be obvious to one of ordinary skill in the art that the combined thickness of the conductive material pattern of Lee and the conductive mesh member of Saito would be in the range of 1-50 μm . Motivation to combine is the same as for claim 1.

Regarding claim 6, Kobayashi further discloses wherein the material that prevents external light from being reflected is a metal oxide (Page 5, Paragraph [0065]). Motivation to combine is the same as for claim 1.

Regarding claims 7, 8, 11, 13, 14, 15 and 16 here the Applicant is claiming the product of a filter including a method (i.e. a process) of making the filter of claim 1, consequently, claims 7, 8, 11, 13, 14, 15 and 16 are considered "product-by-process" claims. In spite of the fact that a product-by-process claim may recite only process limitations, it is the product and not the recited process that is covered by the claim.

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Further, patentability of a claim to a product does not rest merely on the difference in the method by which the product is made. Rather, it is the product itself that must be new and not obvious (see MPEP 2113). The structural limitations of claims 7, 8, 11, 13, 14, 15 and 16 also recited in claims 1 and 2. See claim 1 and 2 rejections above.

Claims 3, 4, 9, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (US Pat. No. 6,559,592), Saito et al. (US Pat. No. 6,469,440), and Kobayashi et al. (US 2004/0027514), and further in view of Nakano et al. (2004/0232813).

Regarding claims 3 and 9, Lee, Saito, and Kobayashi teach the filter of claims 1 and 7. Kobayashi further teaches the black matrix material containing a dye and a pigment (Page 1, Paragraph [0007]), the dye comprising an organic compound of the phthalocyanin group that blocks near infrared rays (Page 9, Paragraph [0110]). Kobayashi fails to teach wherein the pigment is an organic compound of the imonium group. Nakano teaches an imonium group pigment as an additive to a resin for a filter in order to block near infrared rays (Page 5, Paragraph [0077]). Therefore, it would have been obvious to one of ordinary skill in the art to modify the black matrix material of Kobayashi to use the imonium group pigment of Nakano in order to block near infrared rays.

Regarding claims 4 and 10, Lee, Saito, and Kobayashi teach the filter of claims 1 and 7. Kobayashi further teaches the black matrix material containing a dye and a pigment (Page 1, Paragraph [0007]), the dye comprising an organic compound of the

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phthalocyanin group (Page 9, Paragraph [0110]). Kobayashi fails to teach wherein the pigment is an organic compound of the imonium group. Kobayashi also fails to teach wherein the dye blocks light near 590 nm, however, one of ordinary skill in the art would reasonably contemplate that the phthalocyanin group dyes, taught by Kobayashi, include a dye that blocks light near 590 nm. Nakano teaches an imonium group pigment as an additive to a resin for a filter in order to block near infrared rays (Page 5, Paragraph [0077]). Therefore, it would have been obvious to one of ordinary skill in the art to modify the black matrix material of Kobayashi to use the imonium group pigment of Nakano in order to block near infrared rays.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Paynton (US Pat. No. 4,514,585) and further in view of Kanberra et al. (US Pat. No. 6,197,408).

Regarding claim 22, Paynton teaches the invention of claims 17 and 19, but fails to teach wherein the additives comprise a dye. Kanberra teaches a photoresist material (Column 5, lines 13-15 & 44-45) comprising additives (Column 6, lines 6-9; Column 8, lines 8-22) in order to absorb infrared light (Column 4, lines 1-2).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anne M. Hines whose telephone number is (571) 272-2285. The examiner can normally be reached on Monday through Friday from 8:00-4:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Anne M Hines
Patent Examiner
Art Unit 2879

AmH
10/14/05

msl *10/14/05*
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PRIMARY EXAMINER